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MANAGING SAFETY IN A RESEARCH AND DEVELOPMENT ENVIRONMENT[1]

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Category: Management Impact on Safety and Safety Culture

INTRODUCTION

Managing safety and providing the necessary safety culture has become an increasingly complex task for those involved in research and development (R&D) activities such as at a National Laboratory. This is particularly true for facilities dealing with radioactive materials but also for facilities with chemical, toxic or biological hazards. The reason for this increasing complexity is the rising demand for safety assurance being voiced by the public and their elected representatives which is reflected in the actions of regulatory agencies and other government bodies. The result is that effort is being diverted from research activities to deal with safety assurance in an era when most research institutions are dealing with decreasing budgets. This not only inhibits the researcher but places a burden on the safety professionals to deal with the increased attention to safety in a cost effective manner while continuing to monitor important safety functions in the workplace. This can be done by careful development and implementation of policy and guidance and the nurturing of a positive safety culture.

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APPROACH

A successful R&D organization requires a certain amount of flexibility in organizational structure depending on the particular technology and disciplines involved. Rather than a top down management approach many research organizations employ a more collegial style, relying on collective or distributed decision making rather than commands from the top. This organizational style becomes more necessary when budgets for the research institution come from multiple sources, each of which tries to exercise some control over the activities on which its funds are spent.

The regulators and oversight bodies, of course, would prefer to deal with a more monolithic organization, where responsibilities are clearly defined and safety activities are exercised in a uniform fashion across the institution. One way to approximate this, and at the same time eliminate duplication (separately developed action plans, implementation guides, etc. for each research activity), is to have the safety professional develop policy and guidance which is then reviewed and approved collectively by representatives from each of the research elements.

If this can be done in a timely matter then an added benefit is the buy-in obtained from the implementing (research) elements who have been a party to the very policy and guidance they must implement. The challenge is to balance the natural tension which develops between the researchers, who may want to do less to conserve budget, and the safety professionals, who want to do more so as to maximize safety and assure compliance with laws and regulations.

Basic to this balancing of tension is the use of risk-based methods for prioritizing safety activities so that the research (line) organizations feel they are getting the most for the effort expended. This has the added benefit of providing a defense when compliance activities must be deferred because of budget pressures.

Rather than await direction from the regulators, it is necessary to develop an institutional strategy for conducting a safety program based on the needs of the organization. The strategy must be documented so that the institution's personnel, as well as oversight groups, can understand it. Such a document, and all documents used to assure regulatory compliance, should be made as useful and user friendly as possible. In developing the safety program it must be kept in mind that the true objective is to maximize safety, not to just prove compliance.

METHODS

To make the approach outlined above work various elements have to be put in place to exercise a plan-do-check-adjust cycle. At the top sits a body composed of senior managers, e.g., director, associate directors, major department heads, which makes policy and adjudicates unresolved conflicts from lower tier elements in the safety organization. This body may be called an Environmental, Safety and Health (ES&H) Council or Senior Management Council. It is important that this body meets regularly, gives prompt and clear decisions and is perceived as championing safety.

Below this body of senior managers are various Working Groups or Committees which actually work out the policies and communicate them to the research organizations. These second tier bodies do most of the work and must operate on tight schedules. It is here where consensus is achieved or the majority prevails. Issues that can't be resolved at this level are elevated to the senior managers but all attempts should be made to resolve issues at the lower level. An effective way to force a consensus is to require that dissenters from the majority view defend their position before the senior managers.

Since members of the Working Groups are part time they must rely on subject matter experts in the ES&H support organizations to initially develop policy options and implementing guidance. These subject matter expert groups must be placed on an equal footing with the representatives of the research elements as befits their status as qualified professionals.

Finally, there needs to be safety reviews done both by self-assessment and independent review. Those closest to the line organizations are in the best position to judge the effectiveness of their safety activities but some form of independent check by the institution is needed to see that the self assessments are done fairly and the results reported. The results of these assessment activities are then reviewed to make adjustment to policy and its implementation.

ISSUES

After putting in place the safety culture described above, a number of potential pitfalls become apparent. First and foremost is the need to keep the achievement of adequate safety of the public and worker as the goal and not focus exclusively on attaining compliance. In some cases compliance with certain directives may be money misspent to the detriment of achieving other more important safety goals. An example would be to replace signs denoting hazards in

the work place so as to conform to a uniform standard rather than providing appropriate work station equipment to minimize repetitive stress injuries.

Another difficulty encountered is to make prioritization stick. We have used several different prioritization methods to prioritize the expenditure of funds for safety, only to have the rankings overturned because of arbitrary deadlines imposed by regulators. In spite of this, prioritized ranking of activities is useful because it indicates where you should maximize your effort even if you cannot eliminate some activities completely.

Finally it is important to work to keep personnel motivated in light of ever changing requirements and demands. Leadership displayed by top management can play an important role in this process by offering encouragement and support at the appropriate times.

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